

## Chapter 8 — Supporting Resources

Criteria for NHA designation states that an area must have an assemblage of natural, historical, and cultural resources which represent nationally-significant aspects of American history, as well as recreational and educational opportunities. This chapter will discuss some of the key resources of the NHA under consideration which support the Delta's nationally important story and proposed NHA themes. First, a general description is given of some of the major landscape resources which span the region and are supportive of the NHA, along with inventory maps of these resources. Then specific historical/cultural resource sites which are supportive of the NHA are listed, mapped, and described, including: National Historic Landmarks, sites on the National Register of Historic Places, California Historical Landmarks, California Points of Historical Interest, Historically Significant Bridges, Museums, and sites from the Carquinez Strait Resource Plan. Local historical/cultural festivals are also described. Public lands with public access as well as recreational resources are also listed, mapped, and described.

### Description of Major Resources

This section contains description with quantifications of some of the significant landscape resources which span the proposed NHA, and are relevant to the region's nationally significant story and proposed NHA themes.

#### **Waterways**

##### *Natural and Constructed Waterways*

Over 1,000 miles of rivers and sloughs exist throughout the Delta which have been the backbone of the Delta's natural ecosystem, key to shaping the region's settlement patterns, vital to the development of the Delta and its role in the American story, and crucial to the continued sustainability of its communities and economy. Five major rivers converge in the Delta: the Sacramento, San Joaquin, Mokelumne, Cosumnes, and Calaveras, from which stem a number of smaller rivers and sloughs. The waterways of the Delta enable a hydrological connection from the Sierra Nevadas and Central Valley, to the San Francisco Bay and Pacific Ocean. The Delta's waterways serve as important habitat for numerous species, key corridors for commerce and recreation, a source of irrigation water for agriculture, and many other purposes. The waterways were utilized during the Gold Rush era for persons traveling to/from San Francisco and the Sierra Nevadas. River corridors served as early 'highways' and the Delta was dependent on these waterways both for import and export. During the Gold Rush, some of the finest steamboats in America traveled the waters of the Delta and continued to do so both for transporting freight and for leisure purposes. Many of the Delta's historic legacy communities began as steamboat landings, where freight was transported to nearby urban centers for

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consumption or shipment overseas and the Delta's waterways enabled Delta agriculture to be a key component of the world market. Delta farmers continue to pump irrigation water from the Delta channels, which allows for the region's continued capabilities as a leading agricultural producer. Figure 8 is a map of Delta waterways.

It is also important to note that some of the Delta waterways do not follow the natural channels, but were constructed for a variety of purposes such as water circulation or to obtain material for levee construction. The clamshell dredge allowed for deep cuts into the waterways to build higher and stronger levees for flood protection, as well as deeper channels for transportation. The Delta's constructed waterways are highlighted on Figure 9.

The Suisun Marsh, immediately west of the confluence of the Sacramento and San Joaquin Rivers, is also laced with miles of sloughs and channels which are important for the hundreds of wildlife species who depend on the marsh, as well as its recreational users. Additionally, the Carquinez Strait itself is a waterway that is inextricably linked to the Delta's significant natural and cultural history as it is the only natural outlet for waters of the Central Valley to pass through the San Francisco Bay into the Pacific Ocean. It is a key connection both as a fish and wildlife corridor, as well as a human corridor for commerce and recreation.

### *Deep Water Ship Channels*

Towards the end of the reclamation era, runoff and debris buildup became a large problem throughout the Delta. The U.S. Army Corps of Engineers (USACE) became active in maintaining and improving the Delta shipping lines. From 1899 to 1927, the USACE maintained a seven foot deep water channel between Suisun Bay and Sacramento. In 1946, Congress authorized a project to convert the port in Sacramento to a deep water port. The Sacramento Deep Water Channel was completed by the USACE in 1963 and is 30 feet deep, 200 feet wide, and 43 miles long. Additionally, the Stockton Deep Water Channel, through the San Joaquin River, was dredged nine feet in 1913, and by 1987 it had deepened to 37 feet at low tide. It is also approximately 43 miles long. These channels are integral to the Delta's and the Greater Central Valley's contributions as food suppliers for the nation and world. Most of the Delta's \$1.6 billion and the San Joaquin Valley's \$36 billion of agricultural commodities are exported through the channels. Figure 10 show the Sacramento and Stockton Deep Water Channels.

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### *Water Development Facilities*

As California's population increased and agriculture grew in the San Joaquin Valley, a reliable source of water was needed to sustain these populations and economy. In 1951, the Tracy Pumping Plant in the Southern Delta, began pumping water through the CVP down the Delta-Mendota Canal. The CVP stores and transports water from the Sacramento and San Joaquin Rivers for use primarily in the San Joaquin Valley for agricultural irrigation. The project delivers approximately 7.4 million acre feet a year through 20 dams and reservoirs, eight power plants, and about 500 miles of canals and aqueducts. At the same time, the SWP was authorized by the California Legislature, and began pumping water in 1967, delivering water through the California Aqueduct.

Figure 11 illustrates major water development facilities in the Delta. Federal facilities are the Central Valley Project's C.W. "Bill" Jones Pumping Plant (formerly known as the 'Tracy Pumping Plant'), Delta-Mendota Canal, and Contra Costa Canal. The Delta Cross Channel, which is located between the towns of Walnut Grove and Locke, plays a key role as it intercepts Sacramento River water as it travels westward and diverts it south through a series of channels, sloughs, and other waterways, from which water travels to the C.W. Bill Jones Pumping Plant. Facilities which are part of the SWP include the California Aqueduct, the Harvey O. Banks Delta Pumping Plant, and the North and South Bay Aqueducts.

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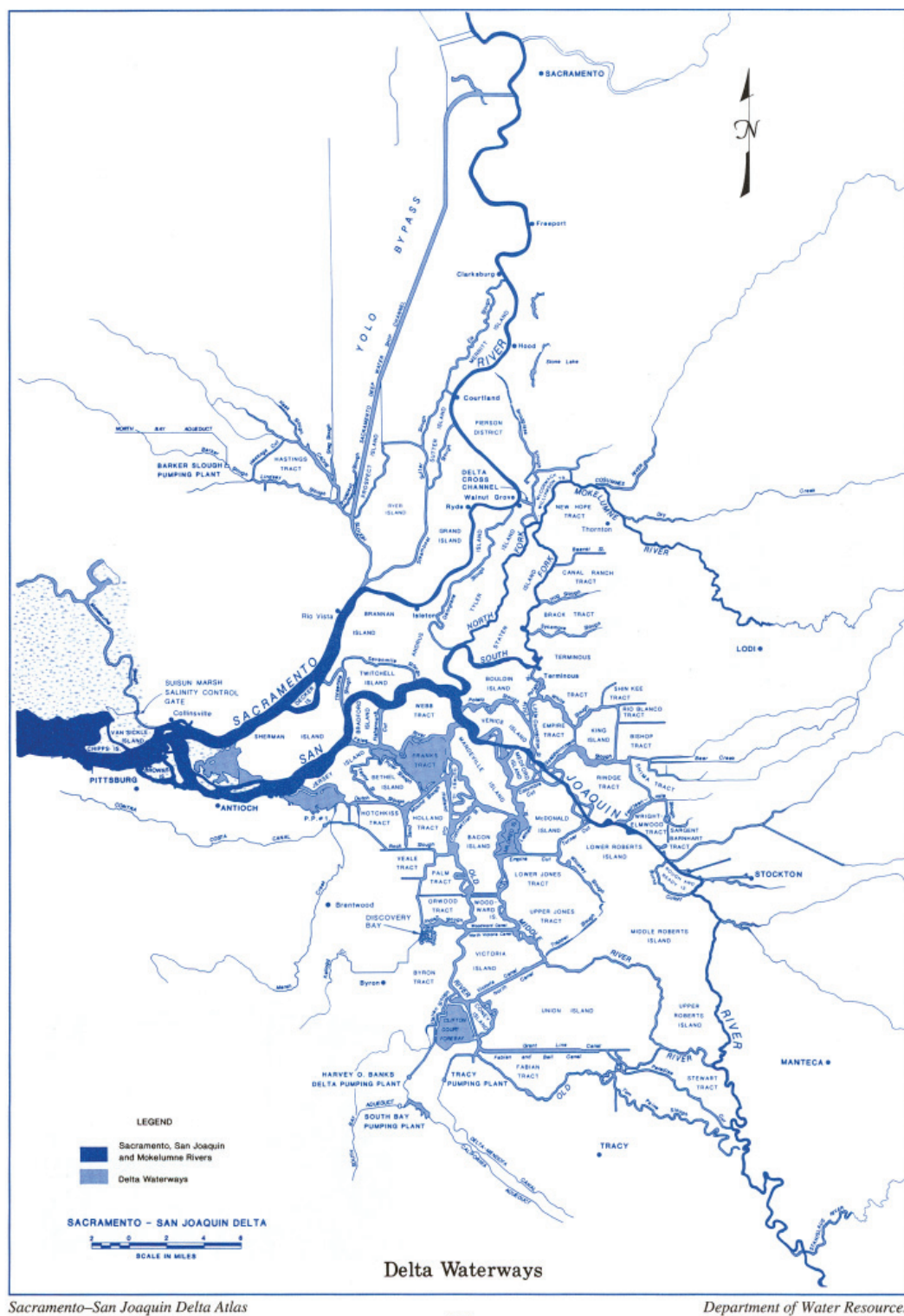


Figure 8. Delta Waterways. Figure Source: Department of Water Resources

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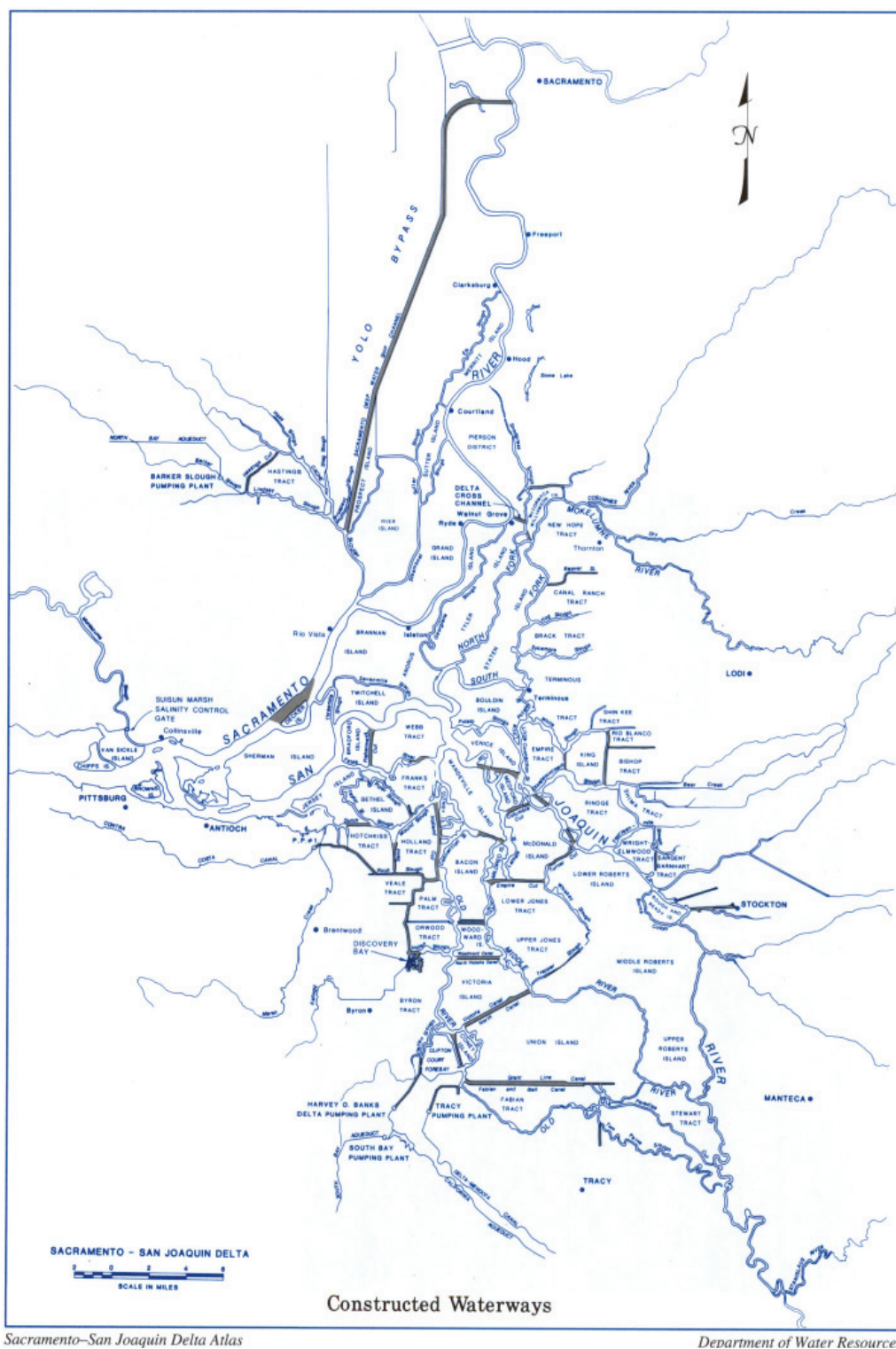


Figure 9. Constructed Waterways. Figure Source: Department of Water Resources

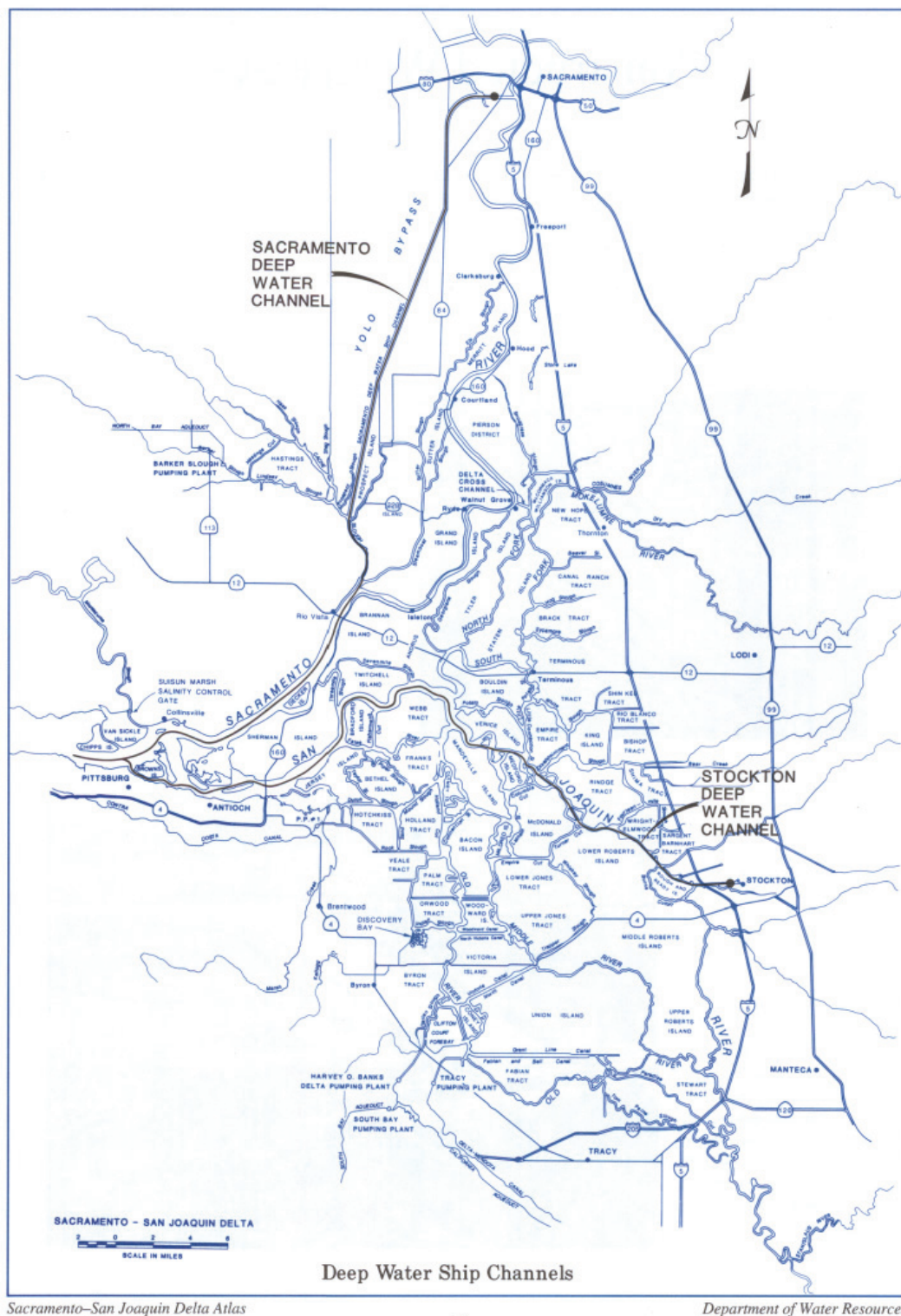
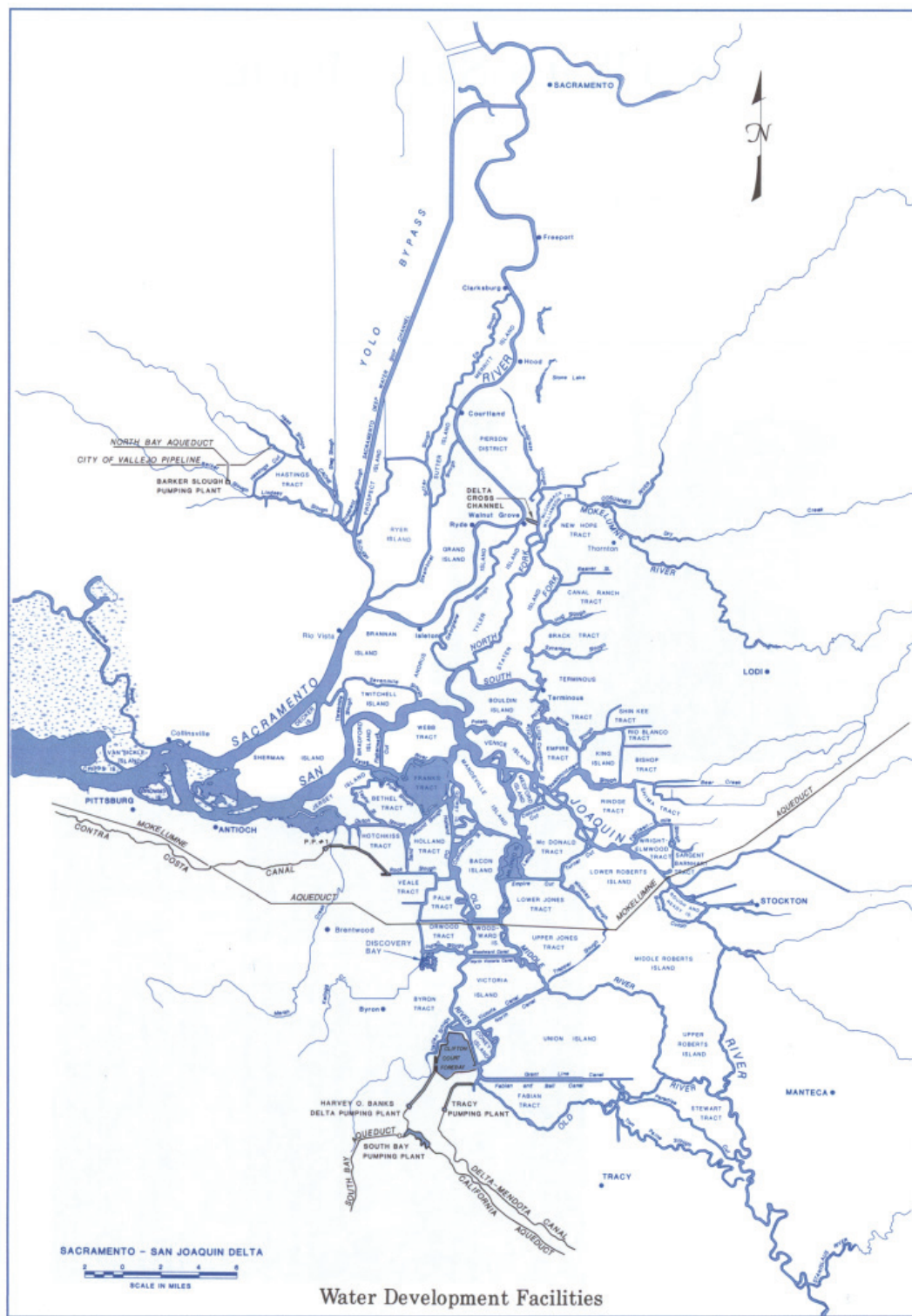


Figure 10. Deep Water Ship Channels. Figure Source: Department of Water Resources

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Sacramento-San Joaquin Delta Atlas

Department of Water Resources

Figure 11. Water Development Facilities. Figure Source: Department of Water Resources

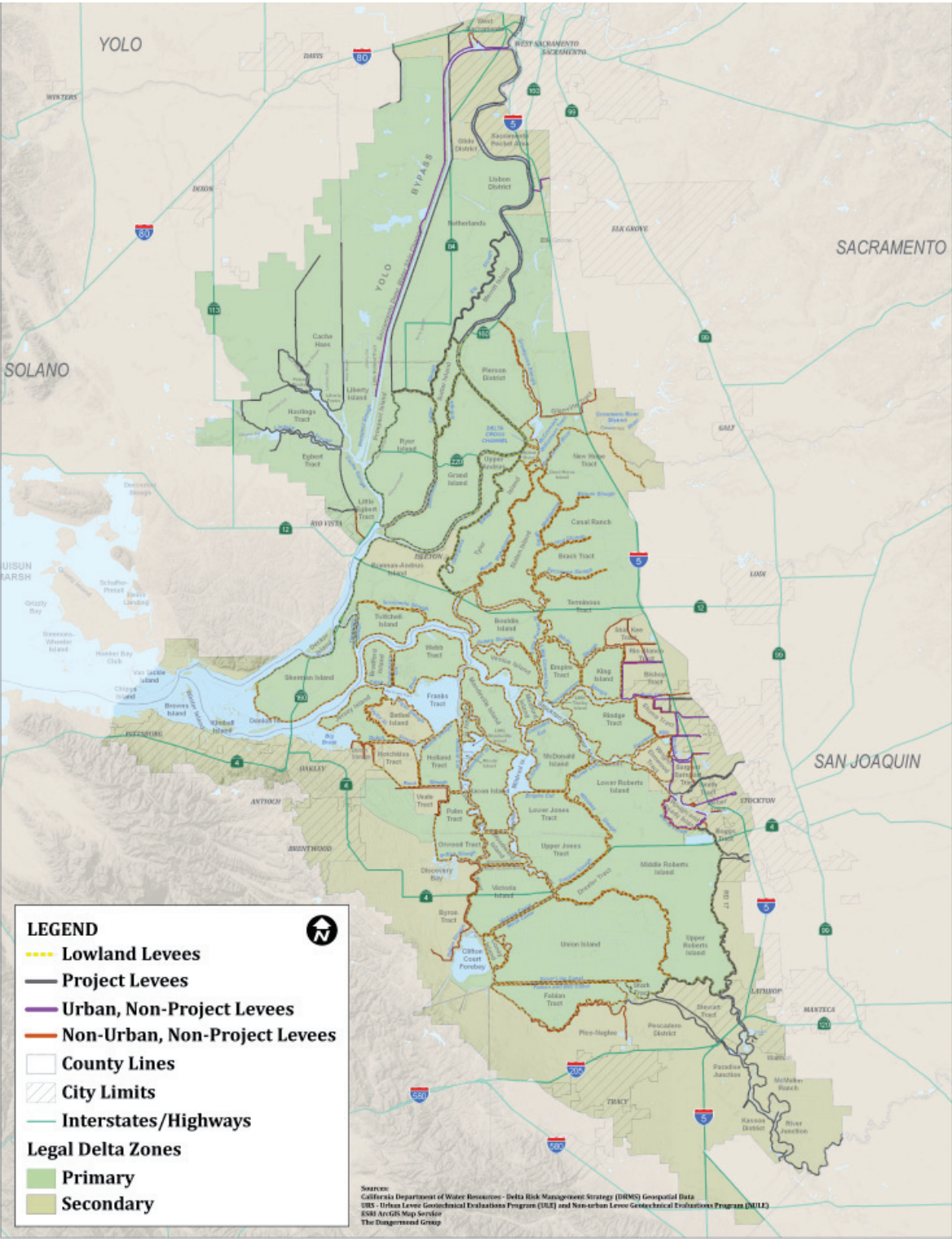
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### Levees

Reclamation led to the development of 1,100+ miles of levees throughout the Delta, enclosing around 57 islands. This vast levee system is crucial, if not critical, to protecting some of the world's most productive farmland; the state's water quality; urban population centers on the periphery of the Delta; legacy communities of the Delta; vital natural resources; and infrastructure including highways 5, 4, 12, and 160, railroads, electrical transmission lines, petroleum pipelines (which supply Northern California and Western Nevada), natural gas pipelines (that provide over 10 percent of the state's natural gas), aqueducts, and the deep water ship channels. Additionally, around 200 miles of levees are found in Suisun Marsh, vital to maintaining to managing the Delta's salinity and protecting over 10 percent of California's remaining natural wetlands which exist in the marsh.

Figure 12 illustrates different categories of Delta levees. Project levees are part of the Sacramento Flood Control Project, which was completed by the USACE in 1960 as part of a plan to transport floodwaters away from protected areas. Nonproject levees protect Delta lowlands which are maintained by local reclamation and levee districts.

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**Figure 12. Delta Levees. Figure Source: Department of Water Resources**

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### Habitat

The Delta, Suisun Marsh, and Carquinez Strait are all in and of themselves important habitat resources as they contain valuable ecosystems that are home to hundreds of wildlife species. When linked together they form a corridor for fish and wildlife which connect inland California with the San Francisco Bay and Pacific Ocean, and also provide an important stopover location for birds traveling north/south along the Pacific Flyway. The Delta's Primary Zone, largely free from urban development, is about 500,000 acres in size, and contains a diversity of ecosystems including wetlands, waterways, riparian woodlands, grasslands, and floodplains. Additionally, Delta farmlands also serve as valuable habitat, particularly when best management practices such as seasonal flooding are utilized. Suisun Marsh is about 116,000 acres in size and an incredibly valuable habitat area as it is the largest continuous brackish water marsh on the West Coast of North America, encompassing more than 10 percent of California's remaining natural wetlands and also contains terrestrial grassland ecosystems. Finally the Carquinez Strait, while partially developed, contains valuable habitat types including open water, mudflats, marshes, grasslands, woodlands, and more. Figure 13 shows the different habitat types throughout the proposed NHA boundary.

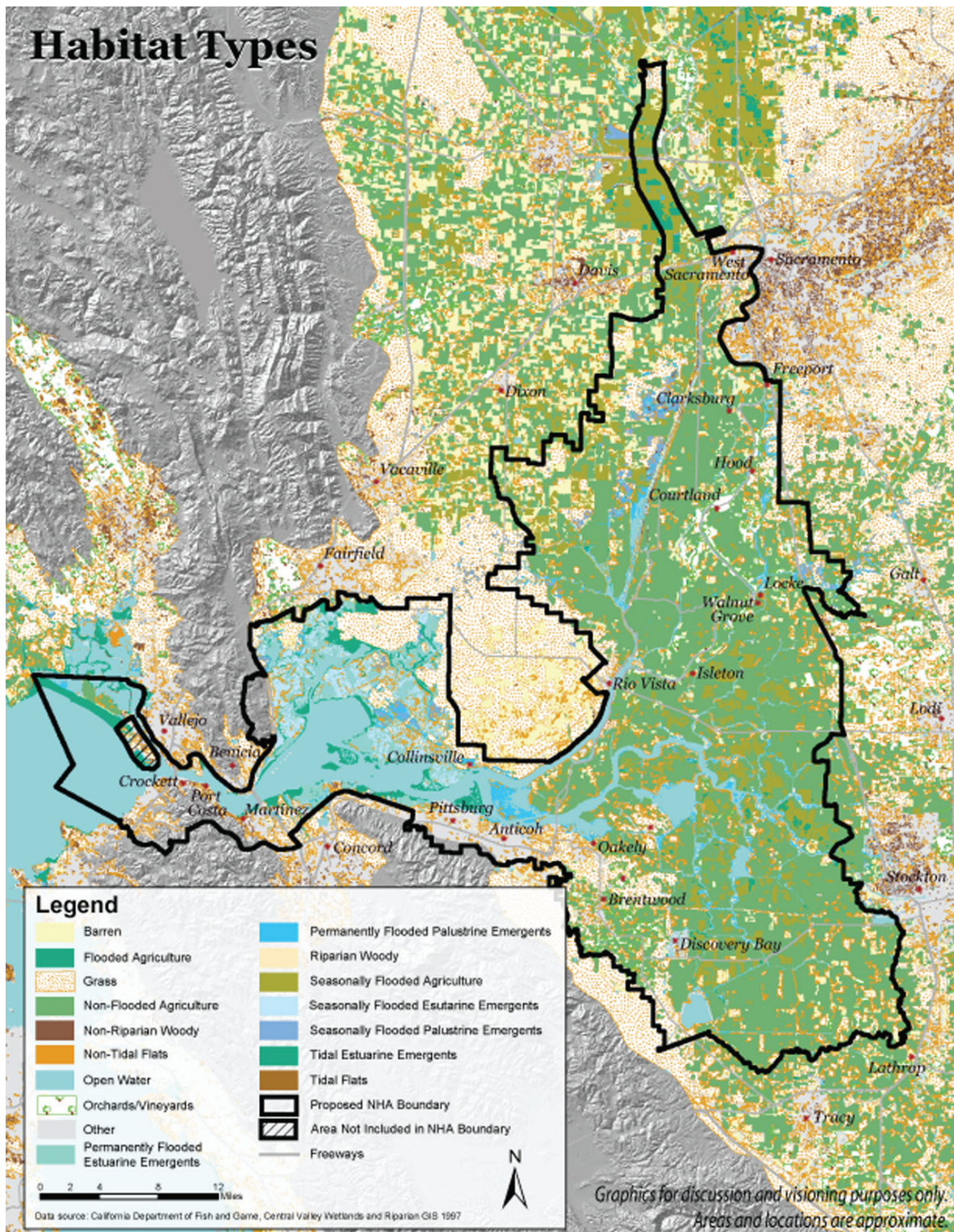


Figure 13. Habitat Types

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### **Agricultural Resources**

The Primary Zone of the Delta is a predominantly agricultural landscape, comprised of about 400,000 acres of productive farmland including orchards, vineyards, fields, and grazing lands. As Figure 14 indicates, the Department of Conservation's Farmland Mapping and Monitoring Program classifies much of the Delta's land as Prime Farmland, meaning it holds the best combination of physical and chemical features able to sustain long term agricultural production. In addition to the farmland itself, agricultural storage and processing facilities exist throughout the region. Agritourism activities such as fruit picking, wine tasting, outdoor education, and more give the public access to the farming culture of the Delta. Agriculture in the Suisun Marsh is limited, but portions of the upland areas are used for grazing (about 20,000 acres), as well as some grain production. While agriculture is not a dominant land use along the Carquinez Strait, the Strait historically played a key role in agricultural processing and storage; with grain warehouses, flour mills, and canning facilities along its shores.

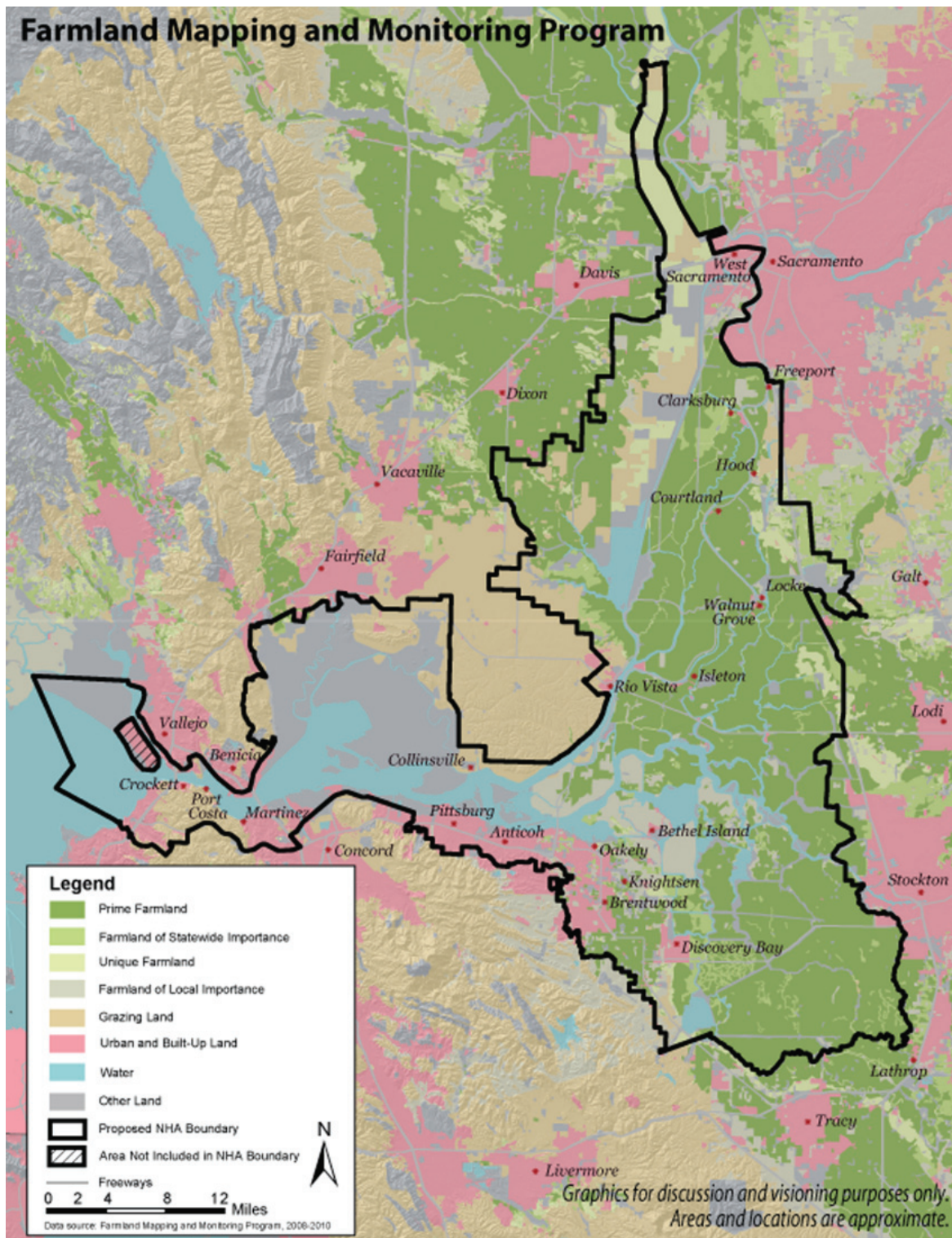


Figure 14. Farmland Mapping and Monitoring Program